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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/863,545	05/23/2001	Hui Tian	1039.010	8787

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EXAMINER

SMITH, ZANDRA V

ART UNIT PAPER NUMBER

2877

DATE MAILED: 03/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/863,545	<b>Applicant(s)</b> TIAN, HUI	
	<b>Examiner</b> Zandra V. Smith	<b>Art Unit</b> 2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL.      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6 and 19-22 is/are rejected.
- 7) ☒ Claim(s) 5, 7-18 and 23-38 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 6, and 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Huang (6,222,390 B1)* in view of *Tsang et al. (5,900,623)*.

As to **claims 1, 3, 19 and 21**, Huang discloses a method and circuit for recycling charge, comprising:

generating charge and applying a portion of the charge generated by the photoelement to other circuitry to reduce power consumption (col. 3, lines 35-60 and col. 4, lines 30-60). Huang, additionally discloses that the charge recycle circuit is coupled to a CMOS circuit (col. 2, lines 1-5), however Huang is silent to the details of the CMOS circuit. Tsang discloses an active pixel sensor using CMOS technology that includes a CMOS circuit (col. 1, line 7) with a photodiode (138, fig. 2) to generate charge. It would have been obvious to one having ordinary skill in the art at the time of invention to include a photodiode as a means to provide charge to the circuit.

As to **claims 2 and 20**, Huang and Tsang disclose everything claimed, as applied above, in addition the circuit is powered by a power supply (col. 5, lines 40-45).

As to **claims 4 and 22**, Huang and Tsang disclose everything claimed, as applied above, in addition the other circuitry is implemented within an integrated circuit (col. 2, line 48).

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As to **claim 6**, Huang and Tsang disclose everything claimed, as applied above, in addition the integration step is a normal operation mode (coll. 5, lines 45-48).

### ***Allowable Subject Matter***

Claims 5, 7-18 and 23-38 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record, taken alone or in combination, fails to disclose or render obvious, transferring the first portion of the charge from the photoelement to a storage device during a reset step of the normal operation mode for the image sensor; and applying the first portion of the charge from the storage device to the other circuitry during a standby mode of the image sensor, in combination with the rest of the limitations of the claims.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

***Weimer (US 3,986,176) and Takeshima et al. (US 6,008,690)***

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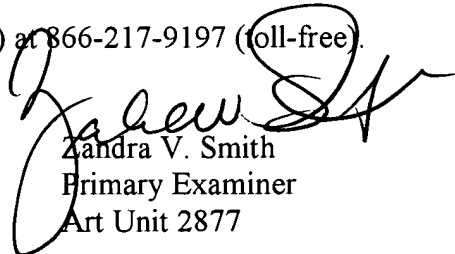
***Fax/Telephone Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zandra V. Smith whose telephone number is (571) 272-2429.

The examiner can normally be reached on 8:00 a.m. - 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Zandra V. Smith  
Primary Examiner  
Art Unit 2877

February 23, 2004